

REMARKS/ARGUMENTS

Claims 27-47 are pending. Claim 27 has been amended. No new matter is added and no new issues are raised by the amendment. Applicants respectfully request reconsideration of the rejections.

Applicants acknowledge the telephone interview with Examiners Calamita and Fredman on June 7, 2005.

The rejection of Claims 27-47 under 35 U.S.C. 112, first paragraph has been maintained. The Office Action states that the specification, while being enabling for markers with mismatches of at least 5 nucleotides where the second mismatch is four nucleotides or less, does not reasonably provide enablement for markers of four or less mismatched nucleotides where the second mismatch is four nucleotides or less.

Applicants discussed these issues in the telephone conference of June 7, 2005. No agreement was reached regarding whether Applicants' use of an inherent property of a bacterial MMR system, in an assay to detect genetic variation, further requires express description of sizes of mismatches triggering or not triggering the MMR system.

Applicants respectfully submit that the presently claimed invention meets the requirements of 35 U.S.C. 112, first paragraph. One of skill in the art could readily practice the claimed invention without undue experimentation. The claims have been amended to clarify that the methyl-directed repair system is provided in a bacterial cell.

The presently claimed invention utilizes an inherent property of bacterial cells, the methyl mismatch repair system. By exploiting a differential between the mismatch required for triggering repair, and a mismatch that is not repaired, Applicants have provided an *in vivo* system that provides a means of phenotypically sorting polynucleotide duplexes according to the presence of mismatches in a test sequence.

Applicants respectfully submit that one of skill in the art could readily practice the present invention with any bacterial methyl-directed mismatch repair system, and it is not necessary that the repair system specifically utilize the sizes of mismatches exemplified in the *E coli* system.

In view of the above amendments and remarks, withdrawal of the rejection is requested.

USSN: 10/081,771

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number UCSF-127CIP2.

Respectfully submitted,
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